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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/642,657	08/19/2003	Kesahiro Koike	Q77049	3050

23373 7590 05/02/2005

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EXAMINER
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RUGGLES, JOHN S

ART UNIT	PAPER NUMBER
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1756

DATE MAILED: 05/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/642,657

Applicant(s)

KOIKE ET AL.

Examiner

John Ruggles

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 04 December 2003 and 19 August 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-14 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Election/Restrictions***

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-5 and 8-10, drawn to methods for polishing a glass substrate using an abrasive liquid (claims 1-5 and 8), classified in class 451, subclass 36; a method of making a mask blank that further includes coating an optical thin film on the polished glass substrate (claim 9), classified in class 427, subclass 160; and a method of making a transfer mask by patterning the optical thin film on the polished glass substrate of the mask blank (claim 10), classified in class 430, subclass 5.
- II. Claims 6-10, drawn to methods for etching a glass substrate using a liquid etchant to selectively remove impurities, such as metal particles (claims 6-8), a method of making a mask blank that further includes coating an optical thin film on the etched glass substrate (claim 9), classified in class 216, subclass 24; and a method of making a transfer mask by patterning the optical thin film on the etched glass substrate of the mask blank (claim 10), classified in class 430, subclass 5.
- III. Claim 11, drawn to a method of patterning a semiconductor substrate by lithography through a transfer mask, classified in class 430, subclass 311.
- IV. Claim 12, drawn to a glass substrate having a specified irregular surface, classified in class 428, subclass 141.
- V. Claim 13, drawn to a mask blank comprising an optical thin film on a glass substrate, classified in class 359, subclass 359.

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- VI. Claim 14, drawn to a transfer mask having a patterned optical thin film on a glass substrate, classified in class 430, subclass 5.

Inventions I and II are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, the Group I methods for polishing a glass substrate using an abrasive liquid have separate utility, such as preparing the glass substrate for subsequent coating, but without involving any selective etching. See MPEP § 806.05(d). Also, the Group I methods for abrasive polishing are not capable of selectively removing impurities, such as metal, from the glass substrate as recited by the Group II methods for etching. Claims 8-10 will be examined with either Group I or Group II, if elected, due to the alternative dependency of these claims.

Inventions I and III are related as process of making and process of using a product transfer mask. The use as claimed for patterning a semiconductor substrate by lithography of Group III can be practiced with a transfer mask made by a materially different method than that of Group I, such as a transfer mask made by selective etching without abrasive polishing of the glass substrate.

Inventions II and III are related as process of making and process of using a product transfer mask. The use as claimed for patterning a semiconductor substrate by lithography of Group III can be practiced with a transfer mask made by a materially different method than that of Group II, such as a transfer mask made by abrasive polishing without selective etching of the glass substrate.

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Inventions I and IV are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make another and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, the product glass substrate as claimed in Group IV can be made by another and materially different process than that of Group I, such as a method involving selective etching of a glass substrate (without abrasive polishing).

Inventions II and IV are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, the product glass substrate as claimed in Group IV can be made by another and materially different process than that of Group II, such as a method involving abrasive polishing of a glass substrate (without selective etching).

Inventions I and V are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make another and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, the product mask blank as claimed in Group V can be made by another and materially different process than that of Group I, such as a method involving selective etching of a glass substrate (without abrasive polishing) before coating an optical thin film on the glass substrate.

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Inventions II and V are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, the product mask blank as claimed in Group V can be made by another and materially different process than that of Group II, such as a method involving abrasive polishing of a glass substrate (without selective etching) before coating an optical thin film on the glass substrate.

Inventions I and VI are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make another and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, the product transfer mask as claimed in Group VI can be made by another and materially different process than that of Group I, such as a method involving selective etching of a glass substrate (without abrasive polishing) before coating and patterning an optical thin film on the glass substrate.

Inventions II and VI are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, the product transfer mask as claimed in Group VI can be made by another and materially different process than that of Group II, such as a method involving abrasive polishing of a glass substrate

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(without selective etching) before coating and patterning an optical thin film on the glass substrate.

Invention III is unrelated to inventions IV and V. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case, neither the glass substrate of Group IV nor the mask blank of Group V is capable of functioning as a transfer mask for patterning the semiconductor substrate in the method of Group III, because neither the glass substrate of Group IV nor the mask blank of Group V has a pattern usable for lithographic transfer to a semiconductor substrate.

Inventions VI and III are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case, the product transfer mask of Group VI can be used in a materially different process than that of Group III, such as a process of lithographic patterning a non-semiconductor substrate to make a non-electrical device (e.g., an optical device, etc.).

Inventions IV and V are related as mutually exclusive species in an intermediate-final product relationship. Distinctness is proven for claims in this relationship if the intermediate product is useful to make other than the final product (MPEP § 806.04(b), 3rd paragraph), and the species are patentably distinct (MPEP § 806.04(h)). In the instant case, the intermediate product glass substrate of Group IV is deemed to be useful for making a coating mask, rather than for making the mask blank of Group V, and the inventions are deemed patentably distinct

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since there is nothing on this record to show them to be obvious variants. Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions anticipated by the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

Inventions V and VI are related as mutually exclusive species in an intermediate-final product relationship. Distinctness is proven for claims in this relationship if the intermediate product is useful to make other than the final product (MPEP § 806.04(b), 3rd paragraph), and the species are patentably distinct (MPEP § 806.04(h)). In the instant case, the intermediate product mask blank of Group V is deemed to be useful for making a patterned etching mask, rather than for making the patterned lithographic transfer mask of Group VI, and the inventions are deemed patentably distinct since there is nothing on this record to show them to be obvious variants. Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions anticipated by the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification and also because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.



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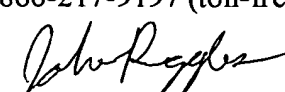
Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined, even if the requirement is traversed (37 CFR 1.143).

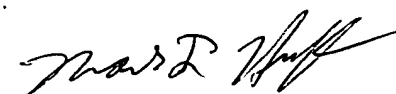
Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Ruggles whose telephone number is 571-272-1390. The examiner can normally be reached on Monday-Thursday and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
John Ruggles  
Examiner  
Art Unit 1756

  
MARK F. HUFF  
SUPERVISORY PATENT EXAMINER  
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